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Assessing Patterns, Reasons, and Adverse Experiences of NSAIDs Usage among Residents of Southern Punjab, Pakistan

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ABSTRACT

Background: Non-steroidal anti-inflammatory drugs are widely used for their analgesic, Antipyretic and anti-inflammatory Properties. However, their misuse and associated adverse effects, such as gastrointestinal, renal and cardiovascular complications pose significant public health concerns.
Objective: This study aimed to assess the patterns, reasons and adverse experiences of NSAIDs usage among residents of Southern Punjab, Pakistan.
Method: A cross-sectional study was conducted using a structured questionnaire administered to 420 residents of Bahawalpur, Bahawalnagar and Vehari with 400 responses analyzed. Statistical analysis was performed using SPSS version 20.
Results: Results showed that 51% of participants used NSAIDs occasionally while 9.8% used them daily. Self-medication was prevalent (42.8%), with headache (37.5%) and fever (28.2%) being the primary reason for use. Ibuprofen (30.3%) and aspirin (19%) were the most preferred NSAIDs. Despite widespread use 71%reported no side effects, though 29% experienced adverse effects, primarily gastrointestinal issues (14.5%). Awareness of potential side effects was moderate (56%) with 58.3% recognizing risks of long-term use. Notably, 92.8% advocated for increased public awareness about safe NSAID practice.
Conclusion: The study highlighted the widespread NSAID use, high self-medication rates and limited awareness of adverse effects in Southern Punjab. Targeted interventions including healthcare provider education and public awareness programs are recommended to promote rational NSAID use and mitigate risks.

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Keywords: NSAIDs, Self-Medication, Southern Punjab, Public Health, Cross-Sectional Study

Introduction

The six main chemical families of medications that make up the NSAIDs are diverse and primarily employed as anti-inflammatory agents. By inhibiting cyclooxygenase enzymes 1 and 2 (COX-1 and COX-2), NSAIDs primarily work by preventing the synthesis of prostaglandins from arachidonic acid, along with prostacyclin and thromboxane. The indication and body of evidence supporting the use of a particular NSAID, its adverse effect profile, patient experience, and preference are some of the factors that will influence the choice of NSAID in clinical practice. At equipotent doses, clinical efficacy of NSAIDs is similar in general population yet among individuals there is considerable variation of different NSAIDs with regards to response and adverse effects(Van Rensburg & Reuter, 2019).

The NSAID use has increased worldwide. Various studies have been conducted to assess the usage pattern of NSAIDs. It was found that there is great er use of NSAIDs among females than males. Approximately 47% of the NSAIDs users were found to be smokers. Among the NSAID users, 13.4% were suffering from hypertension and 8.8% had diabetes. Most of the people used NSAIDs once in a month or less while few have used once in a week or multiple times in a week. Less than 4%, have taken NSAIDs on daily basis. The highlighted reasons were headache (24% in women and 39% in men), toothache and abdominal pain (7% in men and 6% in women)(Farah et al., 2023).

The trend of NSAIDs use is different in different regions according to their availability and access. According to a study conducted in Palestine, the frequently used dosage form of NSAIDs used was tablets. It was reported that 35.9% of the respondents used NSAIDs several times in a year. A few respondents have used NSAIDs in combination with drugs like Paracetamol. NSAIDs were mostly used due to fever (41.8%), Post traumatic stress disorder (approximately 30%) and common cold (12.1%). Many of respondents considered these drugs safe for use(Aboalrob et al., 2023).

Of all the therapeutic agents, NSAIDs are among the most commonly utilized. Considering their tolerability profiles and potential adverse effects on health, doctors play a crucial role in determining if anti-inflammatory medications are necessary and, if so, in choosing and prescribing the best NSAID currently on the market. A study in Portugal demonstrated thar the prevalence of NSAID use was 57% , most of the users were females(67%) and practiced self-medication(Monteiro et al., 2017).

NSAIDs are among those medications which are frequently prescribed due to their analgesic, antipyretic and anti-inflammatory properties. Among the old aged people more than 65 years, the use of NSAIDs has increased up to 96%. While, 7.3% of people who aged below 60 years took NSAIDs once a year. It was reported in a study that about 97% of the people who suffered with chronic pain consumed NSAIDs for straight 21 days(Wongrakpanich et al., 2018).

Early in 2020, there were worries that the usage of NSAIDs could have a detrimental effect on COVID-19 outcomes. Major international health authorities have released revised guidelines on the clinical therapy of COVID-19 since the pandemic began,

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and they constantly advocate for the use of NSAIDs to treat COVID-19 symptoms(Kushner et al., 2022).

Understanding how people with chronic musculoskeletal pain weigh the advantages and disadvantages of treatment, as well as how treatment priorities differ from person to person, is necessary given the increasing emphasis on a patient-centered care model that takes patients' values and priorities into account when making treatment decisions. A study was carried out to determine the preferences of the patients. Better symptom management and minimizing the risk of physical reliance associated with treatment were generally ranked higher by respondents(Walsh et al., 2022).

The appropriate use of NSAIDs (especially OTC) is still a major concern. Pharmacists are known to have more interaction with customers at the pharmacy. A survey was conducted in the form of interview at 10 pharmacies by pharmacists in Kerman (city of Iran). Approximately 35% of NSAIDs users were guided about the appropriate use of drugs and the side effect profile of NSAIDs. Almost 65% of the users consumed NSAIDs as per recommendation and about 24% of users took the drugs as per usual dose. Majority of users (90%) did not know about the drug interactions of the medicines they consumed and 80% users were completely uninformed about the side effects. The users were drawn towards the use of NSAIDs (OTC) because they wanted immediate pain relief. More than one NSAIDs were demanded by 7.2% of consumers(Amirimoghadam et al., 2017).

Parents everywhere worry about how to treat their children's fevers safely and effectively, frequently turning to readily available drugs like paracetamol and ibuprofen. According to a review study, there are wide variations in the prevalence of using paracetamol and ibuprofen to treat pediatric fever. Of the participants, about 27% took ibuprofen and 64.3% took paracetamol. Parental engagement is common and is influenced by things like healthcare provider recommendations and efficacy(Alqudah et al., 2025).

NSAIDs are believed to be used effectively for the intended purpose but they do have side effects that effect Gastrointestinal tract, renal damage and resulting in Myocardial Infarction and sometimes death. Various studies reported that NSAID use has resulted in 100,000 hospitalizations and about 16,500 deaths in us. It was found that there were three to five times increased risk of GIT bleeding due to the use of NSAIDs. The findings of a survey conducted in Thailand highlighted that 62% of the people took NSAIDs with meals while some consumed an hour or half an hour before the meals or a few took right before the bedtime(Montuori et al., 2024).

NSAIDs use especially in high doses has resulted in severe side effects. Findings from a case control study have demonstrated increased upper gastrointestinal bleeding. It happened due to the use of acetylsalicylic acid in higher doses. The reasons for the use of NSAIDs in the patients were acute musculoskeletal pain, osteoarthritis and headache. Cases containing more than 65% NSAIDs users suffered from GI bleeding(Sostres et al., 2017).

Current of use of NSAIDs (especially in the last 14 days) has found to be responsible for more hospital admissions than the past use. The case reported were of heart failure. In a Case control study, use of almost 7 NSAIDs which were traditional and two inhibitors of Cox 2 (Rofecoxib, Etoricoxib) resulted in increased hospital admissions due to heart failure. NSAIDs (Diclofenac, Naproxen and Indomethacin)

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used at higher doses has increased the risk for two folds(Arfè et al., 2016).
NSAIDs are among the most widely used medications that make up 5–10% of all prescriptions written each year, and about 30 million individuals use them daily all over the world. In the US, about 100,000 hospitalizations and 16,500 fatalities are attributed to NSAID-related complications annually. Even though NSAIDs are extensively used, many patients are not aware of the usual hazards involved in using them(Montuori et al., 2024).
The use of NSAIDs among the adults and the awareness of side effects drug interactions with other drugs was assessed in a study in Albania. The respondents who consumed NSAIDs due to their own will were 56%. Acetaminophen and ibuprofen were consumed frequently and 51% of the respondents considered NSAIDs to cause allergic reactions. 1/3rd knew about the drug interactions while some users were still using NSAIDs which are contraindicated(Roshi et al., 2017).
The usage pattern of NSAIDs around the globe is well-known and described in a lot of studies but when it comes to areas like Southern Punjab, there is minimal evidence of how NSAIDs are actually used on a day-to-day basis and what motivates their use and what adverse effects patients undergo after the use. This study aims to investigate the potential factors that result in the misuse of these medications. This study will help in promoting the rational use of drugs in such areas.

Methodology

Objectives of the study

General Objectives

The study aimed to improve public health outcomes, enhance the understanding of medication use patterns, and inform healthcare practices and policies in Southern Punjab. Moreover, this study evaluates the usage patterns, reasons for use and adverse experiences associated with non-steroidal anti-inflammatory (NSAIDs) among residents of Southern Punjab.

Specific Objectives

To determine the frequency of NSAIDs usage among residents of Southern Punjab.
To identify the commonly used NSAIDs in Southern Punjab.
To identify the main reasons behind NSAIDs consumption.
To evaluate the awareness and knowledge of residents about the potential side effects associated with NSAID usage.

Study Design:

A cross-sectional study design was adopted to conduct this study by using a structured, validated questionnaire. Cross sectional study design was adopted as it has many advantages over other study designs. It analyzes data from population at a single point in time and there is no follow up required in this study design. Hence, it is less expensive and easy to conduct(Wang & Cheng, 2020).

Study Setting:

The study was conducted among the residents of cities (Bahawalpur, Bahawalnagar and Vehari) of Southern Punjab, Pakistan. Data was collected by using a

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questionnaire filled by general population. 140 questionnaires were filled from each city.

Study Population:

All individuals who were the permanent residents of Southern Punjab and agreed to participate in the study were included.

Sample Size and Sampling Procedure:

According to Bureau of Statistics Pakistan, the total population of Southern Punjab was estimated to be around 13 million. The sample size was calculated using Rao soft calculator. By using 5% margin of error and 95% confidence interval, the sample size calculated was 385. Considering 10% non-respondents' data, the sample size was estimated to be 420.

Inclusion Criteria:

People aged 18 Years and above of either sex, male or female.
All the individuals who were willing to participate in the study.
All individuals who were healthy both mentally and physically and were able to understand the questionnaire and respond.
People who have used NSAIDs at least once in the past 6 months.
All the individuals should be the permanent residents of Southern Punjab.

Exclusion Criteria:

People aged below 18 Years.
People who were not interested to participate in the study.
Individuals who were not fit mentally or physically and were not able to respond.
Patients not receiving NSAIDs from past 6 months.
People who were not the permanent residents of Southern Punjab.
Pregnant or breast-feeding mothers.

Ethical Approval and Participants Privacy:

The ethical approval to conduct this study was taken from Research and Ethical Committee of The Islamia University of Bahawalpur. Objectives and study nature was explained to all individuals who were willing to participate and after taking verbal consent they were included in the study. It was assured that the participants information will be kept confidential and will not be disclosed in anyway.

Data Collection

Data collection Tool

A validated, structured questionnaire was used**.** The questionnaire was designed in English Language. Questionnaire was comprised of following four sections:
Section 1: Socio-Demographic Information of respondents
Section 2: Usage patterns
Section 3: Reason for use and preference of NSAIDS
Section 4: Side effects experienced and their awareness
Section 1 consist of questions aimed to gather socio-demographic details of the respondents including age, gender, marital status, residence, income level and

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educational level. Section 2 consist of four questions that investigate the usage pattern of NSAIDS including frequency and duration of use. Section 3 contained four questions that inquired the reason and preference of NSAIDs use. Section 4 consist of seven questions that target the side effects experienced by the NSAID use and awareness about the side effects of NSAIDS.

Data collection procedure

Participants with informed consent are invited to fill a questionnaire which contains questions including demographic information, questions about the usage patterns, reasons for use and questions regarding any adverse effects experienced while using NSAIDs.

Data Analysis:

All data was entered and analyzed using SPSS version 20.

Results

Socio-Demographic Information

With regard to the socio-demographic characteristics of the n=400 respondents, the data indicated that the mean age of the respondents was 30, were male (54.8%), were female (45.3%). The relationship status of most respondents was single (61.3%). Majority belonged to urban area (63.5%). Regarding academic qualifications and employment status, 40% had income less than 20,000 and 44% were graduates.

Table:

Sociodemographic Information

Questions	**Response**	**n (%)**
Age (in years)	Mean	30.21
	Standard Deviation	11.462
Gender	Male	219(54.8)
	Female	181(45.3)
	Other	0
Marital Status	Single	245(61.3)
	Married	141(35.3)
	Divorced	8(2)
	Widowed	6(1.5)
Residence	Urban	254(63.5)
	Semi-Urban	68(17)

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	Rural	78(19.5)
Income Level (PKR)	Less than 20,000	162(40.5)
	21,000-50,000	90(22.5)
	51,000-100-000	86(21.)
	Above 100,000	62(15.5)
Education Level	Illiterate	13(3.3)
	Primary	15(3.8)
	Secondary	38(9.5)
	Higher secondary	140(35)
	Graduate	176(44)
	Post Graduate	18(4.5)

NSAIDs Usage Patterns

In order to understand the NSAIDs usage pattern, the respondents were asked questions about the past and recent NSAIDs use, frequency and duration of use. Data indicated that all of the respondents were using NSAIDs.51% of the respondents were using it occasionally.37.5% of the respondents have used NSAIDs in the last week and 60.8% took NSAIDs for less than 1 week.

Table:

NSAID Usage Pattern

Questions	**Response**	**n (%)**
Have you ever used NSAIDs in the past?	Yes	400(100)
	No	
If yes, then how often do you take NSAIDs?	Daily	39(9.8)
	Weekly	68(17)
	Monthly	87(21.8)
	Occasionally	206(51.5)
When was the last time you took NSAIDs?	Today	32(8)
	Yesterday	22(5.5)
	This week	95(23.8)
	In the last week	150(37.5)

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	During the last 6 month	66(16.5)
	I didn't take NSAIDs in the last 6 months?	35(8.8)
Duration of NSAIDs used?	Less than 1 week	243(60.8)
	1-4 weeks	64(16.0)
	1-3 months	30(7.5)
	More than 3 months	63(15.8)

Reasons for use and preference of NSAIDs

With regard to reasons and preference, 42% of the respondents were on self-medication. 37.5% were using NSAIDs mainly for headache. 30% respondents preferred Ibuprofen and 19% used Aspirin. 21.8% preferred NSAIDs due to conveniency.

Table:

Reason for Use and Preference of NSAIDS

Questions	**Response**	**n (%)**
Who recommended the use of NSAIDs?	Self –medication	171(42.8)
	Physician	116(29)
	Pharmacist	49(12.3)
	Family/Friends	64(16.0)
What is the primary reason for using NSAIDs?	Headache	150(37.5)
	Menstrual pain	24(6)
	Joint pain/ Arthritis	28(7)
	Muscle Pain	42(10.5)
	Fever	113(28.2)
	Other	43(10.8)
Which NSAIDs do you prefer to use?	Ibuprofen	121(30.3)
	Diclofenac	61(15.3)
	Aspirin	76(19)

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	Ponstan	72(18)
	Naproxen	27(6.8)
	Ketorol	5(1.3)
	Celecoxib	4(1)
	Other	34(8.5)
Why do you prefer NSAIDs?	Convenience	87(21.8)
	Affordability	45(11.3)
	Ease of access	82(20.5)
	No need for a prescription	67(16.8)
	Higher efficacy	35(8.8)
	Physician recommendation	55(13.8)
	Chronic condition management	4(1)
	Stronger Dosage	4(1)
	Other	21(5.3)

Side effects experienced and their awareness

The individuals were asked questions about experience of side effects and their awareness.71% of the respondents were not experiencing any side effects from using NSAIDs while 29% were experiencing side effects and 14% reported Stomach Pain. 11.8% experienced severe reaction to NSAIDs. Of the 400 NSAIDs users, 56% were aware of the potential side effects. Mostly (28.7%) were aware of the Gastrointestinal issues (stomach pain/ulcers).56% were aware of the risk associated with long term NSAIDs use. 92.8% considered that there is a need for more public awareness about the safe use of NSAIDs.

Table:

Side Effects Experienced and their Awareness

Questions	**Response**	**n (%)**
Have you experienced any side effects from using	Yes	116(29.0)

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NSAIDs?	No	284(71)
If yes, then please specify the side effects experienced?	Stomach pain/ulcers	58(14.5)
	Nausea/Vomiting	26(6.5)
	Dizziness	18(4.5)
	Skin rash/Allergic reactions	5(1.3)
	Other	9(2.3)
Have you ever had a severe reaction to an NSAID, such as allergic reaction or gastrointestinal bleeding?	Yes	47(11.8)
	No	353(88.3)
Are you aware of potential side effects of NSAIDs?	Yes	224(56)
	No	176(44)
If yes, which side effect are you un aware of?	Gastrointestinal issues (stomach, pain, ulcers)	115(28.7)
	Kidney problem	28(7)
	Cardiovascular risks	12(3)
	Allergic reactions	37(9.3)
	Other	32(8)
Are you aware of potential risks associated with long term NSAIDs use?	Yes	233(58.3)
	No	167(41.8)
Do you think there is a need for public awareness about the safe use of NSAIDs?	Yes	371(92.8)
	No	29(7.2)

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Inferential Statistics

Table:

Inferential Statistics

Demographics	**Association**	**P value**
Age	If yes, then how often?	< 0.001
	Last time NSAID use	< 0.001
	Experience of side effect of NSAID use	0.005
	Any severe Reaction to an NSAID	0.012
	Risk due to long term NSAID use	0.002
Gender	Why prefer NSAIDs?	0.014
	Awareness of side effects of NSAIDs	0.032
	Risks due to long term NSAIDs use	0.032
	Need for more public awareness	0.002
Marital Status	If yes, then how do you use NSAIDs?	0.001
	Last time NSAIDs use	0.002
	Duration of use	0.006
	Experience of side effects of NSAIDs use	0.044
	Awareness of side effects of NSAIDs use	0.002
	Risk due to long term NSAIDs use	< 0.001

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Residence	Primary reason for NSAIDs use	0.002
	Risk due to long term NSAIDs use	0.049
	Need for more public awareness	< 0.001
Income Level	Duration of NSAIDs use	< 0.001
	Why do you prefer NSAIDs	0.02
	Any severe reaction to NSAIDs use	0.04
	Awareness of potential side effects of NSAIDs	0.01
	Awareness of potential risk with long term NSAIDs use	0.01
Educational Level	If yes, then how often do you use NSAIDs	0.04
	Last time NSAIDs use	< 0.001
	Who recommended the use of NSAIDs	0.03
	Any severe reaction NSAIDs use	0.03

An evaluation of the possible associations between NSAIDs use and socio-demographics characteristics of respondents indicated that there was a statistically significant association of age with frequency of NSAIDs use ($p<0.001$), last time NSAIDs use ($P<0.001$), Experience of side effects of NSAIDs ($p=0.005$), any severe reaction to NSAIDs ($p=0.0120$) and awareness of potential risks with long term NSAIDs use ($p=0.002$). There was no significant association between age and primary reason for the use of NSAIDs.

Preference for using NSAIDs ($p=0.014$), awareness of side effects of NSAIDs ($p=0.032$), potential risks due to long term NSAIDs use ($p=0.03$), and need for more public awareness ($p=0.002$) were significantly associated with gender. There was no significant association of gender with frequency and duration of NSAIDs use.

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There was a statistically significant association between Frequency of NSAIDs use and the relationship status (p=0.001), Last time NSAIDs use (p=0.002), duration of use (p=0.006), experience of side effects of using NSAIDs (p=0.044), awareness of side effects of NSAIDs use (p=0.002) and potential risks due to long term NSAIDs use (p<0.001). Primary reasons for using NSAIDs and preferences for using NSAIDs were not significantly associated with relationship status.

A significant association of residence was found with reasons for using NSAIDs (p=0.002), potential risks due to long term NSAIDs use (p=0.049) and need for more public awareness (p<0.001). There was no significant association with frequency of NSAIDs use and preferences for using NSAIDs with residence.

Income level of the respondents was significantly associated with duration of NSAIDs use (p<0.001), preference of using NSAIDs (p=0.02), any severe reaction to an NSAIDs use (p=0.04), awareness of potential side effects of NSAIDs use (p=0.01) and potential risks associated with long term NSAIDs use (p=0.01).

There was a very significant association of educational level with frequency of using NSAIDs (p=0.04), last time NSAIDs use (p<0.001), Recommendations for using NSAIDs (p=0.03) and severe reaction to NSAIDs use (p=0.03).

Discussion

NSAIDs' antipyretic, anti-inflammatory, and analgesic qualities make them one of the most popular drugs on the market today. However, because NSAID use is increasing, there is a worrying trend where NSAIDs are used in many situations where they are contraindicated. NSAID side effects are considered serious and occur in disturbingly high numbers. Nonetheless, there is still a need to improve NSAID usage behavior and practices by putting planned teaching methods into place(Aboalrob et al., 2023).Therefore in this study ,our objective is to assess patterns, reasons and adverse experiences of NSAIDs usage .

In our study, the frequency of using NSAIDs varies among respondents, 51% of the respondents were taking it occasionally, 21% monthly,17% weekly and only 9.8% of the respondents were taking it daily. In 60% of the respondents the duration of using NSAIDs was less than one week. In a study conducted in Australia in old aged people, the use of NSAIDs was assessed and the mean duration for use of NSAIDs was reported to be 4.9 years(Gnjidic et al., 2014).

Self-medication represents an important public health issue, but little data exists regarding its risk. In this study, 42.8% of respondent's practices self-medication with NSAIDs. About 12.3% of the individuals said they received recommendations from pharmacy professionals about NSAID use. In a similar survey conducted in Peru (A country in South America), suggested that out of 2158 participants, the prevalence of self-medication with NSAIDs was 68.21%. This study revealed that 7 out of 10 participants self- medicated with NSAIDs(Benites-Meza et al., 2025).

About 37.5% of the sample considered headaches the reason for taking NSAIDs and 28% of the respondents were using it for fever. Of the 400 NSAIDs users in our study, 30% respondents preferred ibuprofen followed by aspirin (19%), ponstan (18%), diclofenac (15%). In contrast to our study, a study conducted among athletes in Brazil indicated that the main reason for the use of NSAIDs in the last 3 months was found to be the treatment of injuries and the major reason for the use of NSAIDs use during

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the race was pain prophylaxis(Gorski et al., 2011).

Of the 400 NSAIDs users in our study, 29% of the respondents have experienced side effects from using NSAIDs, while 71% of the respondents did not face any side effects. 14.5% of the respondents reported stomach pain/ulcers and nausea/vomiting (6.5%). A similar study conducted in Saudia Arabia, indicated that out of 211 participants 59.2% had no complications from using NSAIDs. Majority (37.9%) reported peptic ulcer and GIT bleeding (5%)(Alhammadi et al., 2022)**.**In contrast to our study, A study conducted in USA, 66 Participants consumed NSAIDs and 59 reported at least one adverse effect after using NSAIDs and major side effects reported were fatigue, dry mouth and headache(Fernandez et al., 2019).

In our study, 56% of the respondents were aware of the potential side effects of NSAIDs and 44% had no awareness while 58.3% were aware of potential risks associated with long term NSAIDs use and 41.8% were not aware of the risks associated with long term NSAIDs use. Of the 56% of the respondents who were aware of the potential side effects, 28.7% were aware of GIT issues (stomach pain/ulcers), kidney problems (7%), allergic problems (9.3%), cardiovascular events (3%). Almost all of the respondents agreed that there is need for more public awareness for safe use of NSAIDs. In a similar study conducted in Albania, out of 199 respondents, about half of the respondents were aware of the side effects while 48.7% had no awareness. Majority knew that NSAIDs can cause allergy. A minor percentage of respondents were aware of other side effects of NSAIDs including GIT ulcers(Roshi et al., 2017)**.**In a similar study conducted among orthopedic patients in Thailand indicated that out of 474 patients, overall perception of risks was low (scoring below 5 on a 0-10 vision analogue scale).Perceptions and knowledge concerning NSAIDs use was low in patients but higher in those who had received side effect information(Phueanpinit et al., 2016).

Limitations

Our study has several limitations, a cross-sectional study design, thus factors affecting individuals' responses cannot be studied over time. The study will be conducted only in few cities of Southern Punjab; therefore, findings of this study cannot be the representative of whole Pakistan. Data collection will be small due to limited time and financial constraints. Therefore, further studies are required to validate the study outcomes.

Conclusion and Recommendations

Conclusion

The research aimed to assessed the pattern, reasons and adverse experiences of NSAIDs usage among residents of Southern Punjab, Pakistan. The findings of the study indicated that usage pattern varies among the respondents and majority is using NSAIDs occasionally. A high proportion of NSAID users rarely or never received recommendations on NSAIDs use. Furthermore, the majority of NSAIDs users practiced self-medication. The survey sample revealed that majority of the people were taking NSAIDs primarily for headaches and they preferred ibuprofen mostly due to convenience, ease of access and no need for prescription. Data indicated that majority of NSAIDs users have not experience any side effect from using NSAIDs

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and few reported GIT issues (stomach pain, ulcers), nausea/vomiting, dizziness, skin rash/allergies. More than half of the sample population were aware of the potential risks associated with long term NSAIDs use and almost all the sample population agreed for the need of more awareness about the safe use of NSAIDs.

Recommendations

Recommendations about patterns of NSAIDs usage:

Physician and pharmacist should educate and counsel patients about appropriate NSAIDs use including dosage, duration and potential side effects.

Health care provider should provide consultations to reduce self-medication (42.8% in the study) and ensure appropriate NSAID selection and dosing.

Public health campaigns and educational sessions should organize in rural and urban areas to educate residents about the potential side effects and risks of long-term NSAIDs use.

Recommendations about reason of NSAIDs usage:

Enhance public awareness to discourage the misuse of NSAIDs for minor ailments like headache (37.5%) and fever (28.2%). Use NSAIDs only when necessary.

Self-medication (42.8%) should be discouraged. Educate communities on the risks of self-medication and importance of professional consultation.

Recommendations about adverse experience of NSAIDs usage:

Lowest effective dose should be used for shortest duration.

Healthcare provider and patients should be educated on early danger signs.

Strict regulations should be implemented on high risk NSAIDs (High dose diclofenac).

Increase awareness about common side effects (gastrointestinal pain) through health campaigns.

Strengthen pharmacovigilance systems to track and analyze NSAID related complications.

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